INDIANA PROJECT WET

State Science Standards Correlation to Activities

Please use the following correlations of the Project WET activities to the Indiana State Science Standards for your planning needs.

Project WET provides workshops throughout the state, and they can Be designed to meet your grade level or group needs.

Correlations will be available on line at:

projectwet.in.gov

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EIGHTH GRADE

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Project WET Activities correlated to the Indiana State Science Standards

Page	Project WET Activity
3	***Check It Out!*** Explore a variety of performance assessment strategies
7	***Idea Pools*** Become familiar with pre-assessment strategies
9	***Let's Work Together*** Use cooperative learning strategies
12	***Water Action*** Propose, analyze, and implement action strategies
19	***Water Log*** Assess student learning through a journal of portfolio
25	***Adventures in Density*** Experiment with density and explore examples of density in classic literature
30	***H_2Olympics*** Compete in a water Olympics to investigate adhesion and cohesion
35	***Hangin' Together*** Mimic hydrogen bonding in surface tension, ice formation, evaporation, ad solutions
43	**Is *There Water on Zork?*** Test the properties of water
47	***Molecule in Motion*** Simulate molecular movement in water's three states
50	***Water Match*** Match water picture cards and discover the three states of water
54	***What's the Solution*** Solve a crime while investigating the dissolving power of water
63	***Aqua Bodies*** Estimate the amount of water in a person, a cactus, or a whale
66	***Aqua Notes*** Sing to discover how the human body uses water
72	***Let's Even Things Out*** Demonstrate osmosis and diffusion
76	***Life Box (The)*** Discover the elements essential to life
79	***Life in the Fast Lane*** Explore Temporary wetlands
85	***No Bellyachers*** Show how pathogens are transmitted by water by playing a game of tag
89	***People of the Bog*** Construct a classroom bog
93	***Poison Pump*** Solve a mystery about a waterborne disease
99	***Salt Marsh Players*** Role-play organisms adapted to life in a salt marsh
107	***Super Sleuths*** Search for others who share similar symptoms of a waterborne disease
116	***Thirsty Plants*** Demonstrate transpiration and conduct a field study
122	***Water Address*** Analyze clues to match organisms with water-related adaptations
129	***Branching Out!*** Construct a watershed model
133	***Capture, Store, and Release*** Use a household sponge to demonstrate how wetlands get wet and how they contribute to a watershed
136	***Get the Ground Water Picture*** Create an "earth window" to investigate ground water systems
144	***Geyser Guts*** Demonstrate the workings of a geyser
150	***Great Stony book (The)*** Create layers of buried fossils and read a great stony book
155	***House of Seasons (A)*** Create a collage that peeks through a "window" to reveal the role of water in each season
157	***Imagine!*** Imagine a water molecule on its water journey
161	***Incredible Journey (The)*** Simulate the movement of water through Earth's systems
166	**Just Passing Through** Mimic the movement of water down a slope

Page	Project WET Activity
171	***Old Water*** Create a mural that relates events to the age of Earth, water, and life
174	***Piece It Together*** Explore global climates and their influence on lifestyles
182	***Poetic Precipitation*** Simulate cloud formation and express feelings toward precipitation through poetry
186	***Rainy -Day Hike*** Explore schoolyard topography and its effect on the watershed
191	***Stream Sense*** Develop sensory awareness of a stream
196	***Thunderstorm (The)*** Simulate the sounds of thunderstorm and create precipitation maps
201	***Water Models*** Construct models of the water cycle and adapt them for different biomes
206	***Wet Vacation*** Plot data to determine weather patterns and design appealing travel brochures
212	***Wetland Soils in Living Color*** Classify soil types using a simple color key
219	***A-maze-ing Water*** Negotiate a maze to investigate nonpoint source pollution
223	***Color Me a Watershed*** Interpret maps to analyze changes in a watershed
232	***Common Water*** Demonstrate that water is a shared resource
238	***Drop in the Bucket (A)*** Calculate the availability of fresh water on Earth
242	***Energetic Water*** Design devices to make water do work
246	***Great Water Journeys*** Use clues to track great water journey of plants, people, and other animals on a map
254	***Irrigation Interpretation*** Model different irrigation systems
260	***Long Haul (The)*** Haul water to appreciate the amount of water used daily
262	***Nature Rules!*** Write news stories based on natural, water-related disasters
267	***Sum of the Parts*** Demonstrate nonpoint source pollution
271	***Water Meter*** Construct a water meter and keep track of personal water use
274	***Water Works*** Create a web of water users
279	***Where Are the Frogs*** Run a simulation and experiment to understand the effects of acid rain
289	***AfterMath*** Assess economic effects of water-related disasters
293	**Back to the Future** Analyze streamflow data to predict floods and water shortages
300	***CEO (The)*** Become a Chief executive Officer (CEO) and learn about business/corporate water management challenges
303	***Dust Bowls and Failed Levees*** Witness, through literature, the effects of drought and flood on human populations
307	***Every Drop Counts*** Identify and implement water conservation habits
311	***Grave Mistake (A)*** Analyze data to solve a ground water mystery
316	***Humpty Dumpty*** Simulate a restoration project by putting the pieces of an ecosystem back together
322	***Macroinvertebrate Mayhem*** Illustrate, through a game of tag, how macroinvertebrate populations indicate water quality
328	***Money Down the Drain*** Observe and calculate water waste from a dripping faucet
333	***Price is Right (The)*** Analyze costs for building a water development project
338	***Pucker Effect (The)*** Simulate ground water testing to discover the source of contamination
344	***Reaching Your Limits*** "Limbo" to learn basic water quality concepts and standards development
348	***Sparkling Water*** Develop strategies to clean wastewater

Page	Project WET Activity
353	***Super Bowl Surge*** Develop a strategy to accommodate the demands on a wastewater treatment plant
360	***Wet-Work Shuffle*** Sequence the water careers involved in getting water to and from the home
367	***Choices and Preferences, Water Index*** Develop a “water index” to rank water uses
373	***Cold Cash in the Icebox*** Create a mini-insulator to prevent an ice cube from melting
377	***Dilemma Derby*** Examine differing values in resolving water resource management dilemmas
382	***Easy Street*** Compare quantities of water used in the late 1800s to the present
388	***Hot Water*** Debate water issues
392	***Pass the Jug*** Simulate water rights policies with a "jug" of water
397	***Perspectives*** Identify values to solve water management issues
400	***Water: Read All About It!*** Develop a Special Edition on water
403	***Water Bill of Rights*** Create a document to guarantee the right to clean and sustainable water resources
407	***Water Concentration*** Play concentration and discover how water use practices evolve
413	***Water Court*** Participate in a mock court to settle water quality and quantity disputes
421	***Water Crossings*** Simulate a water crossing and relate the historical significance of waterways
425	***What's Happening?*** Conduct a community water use survey
429	***Whose Problem Is It?*** Analyze the scope and duration of water issues to determine personal and global significance
435	***Raining Cats and Dogs*** Discover how water proverbs vary among culture and climates
442	***Rainstick (The)*** Build an instrument that imitates the sound of rain
446	***Water Celebration*** Organize a water celebration with activities from this guide
450	***wAteR in motion*** Create artwork that simulates the movement and sound of water in nature
454	***Water Message in Stone*** Replicate ancient rock art, creating symbols of water
457	***Water Write*** Explore feelings about and perception of water topics through writing exercises
460	***Wish Book*** Compare recreational uses of water in the late 1800s and the present

Eighth Grade

	The Nature of Science and Technology	Scientific Thinking	The Physical Setting	The Living Environment	The Mathematical World	Common Themes
ACTIVITY						
Adventures in Density (25)			8.3.9 8.3.15			8.7.7
A-maze-ing Water (219)	8.1.8		8.3.6			8.7.4
Back to the Future (293)	8.1.8	8.2.4 8.2.8	8.3.6		8.5.4 8.5.8	8.7.4 8.7.7
Choices & Preferences (367)	8.1.7		8.3.6		8.5.9	
Common Water (232)			8.3.6			
Dilemma Derby (377)			8.3.6			
A Drop in the Bucket (238)			8.3.6			
Easy Street (382)			8.3.6			
Energetic Water (242)			8.3.15			
Every Drop Counts (307)			8.3.6			
Get the Ground Water (136)		8.2.8				
Geyser Guts (144)			8.3.15			8.7.7
A Grave Mistake (311)		8.2.7			8.5.7	
H2O Olympics (30)		8.2.7	8.3.9			
Hangin' Together (35)			8.3.9 8.3.15			
Humpty Dumpty (316)	8.1.7		8.3.6			8.7.2
Imagine! (157)						8.7.7
The Incredible Journey (161)						8.7.7
Irrigation Interpretation (254)	8.1.1 8.1.8		8.3.6			8.7.2
Just Passing Through (166)			8.3.6			
Let's Even Things Out (72)			8.3.9			8.7.5
Life in the Fast Lane (79)						8.7.7
The Long Haul (260)	8.1.7		8.3.6			
Money Down the Drain (328)		8.2.2 8.2.4 8.2.8	8.3.6			

	The Nature of Science and Technology	Scientific Thinking	The Physical Setting	The Living Environment	The Mathematical World	Common Themes
ACTIVITY						
Old Water (171)						8.7.5
Pass the Jug (392)	8.1.7 8.1.8		8.3.6			
Perspectives (397)	8.1.7	8.2.7				
Piece It Together (174)			8.3.15			8.7.7
Poetic Precipitation (182)			8.3.9			8.7.7
Poison Pump (93)	8.1.8				8.5.6	
The Pucker Effect (338)			8.3.6 8.3.9		8.5.6	
Rainy-Day Hike (186)		8.2.8				8.7.4
Reaching Your Limits (344)	8.1.7	8.2.2	8.3.6			
Sparkling Water (348)	8.1.8					8.7.7
Sum of the Parts (267)			8.3.6			
Super Bowl Surge (353)	8.1.7 8.1.8	8.2.8				
Super Sleuths (107)	8.1.8		8.3.9			
Thirsty Plants (116)		8.2.2 8.2.8	8.3.9			8.7.7
Water Concentration (407)			8.3.6			
Water Meter (271)		8.2.2	8.3.6			
Water Models (201)			8.3.6 8.3.9 8.3.15			8.7.7
Wet Vacation (206)		8.2.8				8.7.7
Wet-Work Shuffle (360)	8.1.8					
Wetland Soils (212)		8.2.8				
Where Are the Frogs? (279)	8.1.3	8.2.8	8.3.6		8.5.4	

Grade 8

Standard 1

The Nature of Science and Technology

Students design and carry out increasingly sophisticated investigations. They understand the reason for isolating and controlling variables in an investigation. They realize that scientific knowledge is subject to change as new evidence arises. They examine issues in the design and use of technology, including constraints, safeguards, and trade-offs.

The Scientific View of the World

8.1.1 Recognize that and describe how scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory* leads to looking at old observations in a new way.

WET Activities (page): 254

Scientific Inquiry

8.1.3 Recognize and describe that if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be attributable to any one of the variables.

WET Activities (page): 279

Technology and Science

8.1.7 Explain why technology issues are rarely simple and one-sided because contending groups may have different values and priorities.

WET Activities (page): 260, 274, 316, 344, 353, 367, 392, 397

8.1.8 Explain that humans help shape the future by generating knowledge, developing new technologies, and communicating ideas to others.

WET Activities (page): 93, 107, 219, 254, 293, 348, 353, 360, 392

Standard 2

Scientific Thinking

Students use computers to organize and compare information. They perform calculations and determine the appropriate units for the answers. They weigh the evidence for or against an argument, as well as the logic of the conclusions.

Computation and Estimation

8.2.2 Determine in what unit, such as seconds, meters, grams, etc., an answer should be expressed based on the units of the inputs to the calculation.

WET Activities (page): 116, 271, 328, 344

Manipulation and Observation

8.2.4 Use technological devices, such as calculators and computers, to perform calculations.

WET Activities (page): 293, 328,

Communication

8.2.7 Participate in group discussions on scientific topics by restating or summarizing accurately what others have said, asking for clarification or elaboration, and expressing alternative positions.

WET Activities (page): 30, 311, 397

8.2.8 Use tables, charts, and graphs in making arguments and claims in, for example, oral and written presentations about lab or fieldwork.

WET Activities (page): 116, 136, 186, 206, 212, 279, 293, 328, 353

Standard 3

The Physical Setting

Students collect and organize data to identify relationships between physical objects, events, and processes. They use logical reasoning to question their own ideas as new information challenges their conceptions of the natural world.

The Earth and the Processes That Shape It

8.3.6 Understand and explain that the benefits of Earth's resources, such as fresh water, air, soil, and trees, are finite and can be reduced by using them wastefully or by deliberately or accidentally destroying them.

WET Activities (page): 166, 201, 219, 232, 238, 254, 260, 267, 271, 274, 279, 293, 307, 316, 328, 338, 344, 367, 377, 382, 392, 407

Matter and Energy*

8.3.9 Demonstrate, using drawings and models, the movement of atoms in a solid*, liquid*, and gaseous* state. Explain that atoms and molecules are perpetually in motion.

WET Activities (page): 25, 30, 35, 72, 107, 116, 182, 201, 338

8.3.15 Identify different forms of energy that exist in nature.

energy: what is needed to do work

work: a force acting over a distance to move an object

force: a push or a pull that can cause a change in the motion of the object

*motion: a change in position of an object in a certain amount of time

*atoms: smallest particle of an element that has the properties of that element

*element: the simplest type of pure substance; a substance consisting entirely of atoms having identical chemical properties

*solid: matter with a definite shape and volume

*liquid: matter with no definite shape but with a definite volume

*gas: matter with no definite shape or volume

*metals: one class of substances that are mostly shiny, bendable, and good conductors of heat and electricity

*non-metals: one class of substances that does not have metallic properties; usually a poor conductor of heat and electricity

*heat: a form of energy characterized by random motion at the molecular level

*radiation: energy transfer through space

*convection: heat transfer in liquids and gases by transport of matter from a region of one temperature to a region of a different temperature

WET Activities (page): 25, 35, 144, 174, 201, 242, 262

Standard 5

The Mathematical World

Students apply mathematics in scientific contexts. Students use mathematical ideas, such as symbols, geometrical relationships, statistical relationships, and the use of key words and rules in logical reasoning, in the representation and synthesis of data.

Shapes and Symbolic Relationships

8.5.4 Illustrate how graphs can show a variety of possible relationships between two variables.

WET Activities (page): 279, 293

Reasoning and Uncertainty

8.5.6 Explain that a single example can never prove that something is always true, but it could prove that something is not always true.

WET Activities (page): 93, 338

8.5.7 Recognize and describe the danger of making over-generalizations when inventing a general rule based on a few observations.

WET Activities (page): 311

8.5.8 Explain how estimates can be based on data from similar conditions in the past or on the assumption that all the possibilities are known.

WET Activities (page): 293

8.5.9 Compare the mean*, median*, and mode* of a data set.

WET Activities (page): 367

Standard 7

Common Themes

Students analyze the parts and interactions of systems to understand internal and external relationships. They investigate rates of change, cyclic changes, and changes that counterbalance one another. They use mental and physical models to reflect upon and interpret the limitations of such models.

Systems

8.7.2 Explain that even in some very simple systems, it may not always be possible to predict accurately the result of changing some part or connection.

WET Activities (page): 254, 316

Models and Scale

8.7.4 Explain that as the complexity of any system increases, gaining an understanding of it depends on summaries, such as averages and ranges*, and on descriptions of typical examples of that system.

*range: the difference between the largest and the smallest value

WET Activities (page): 186, 219, 293

Constancy and Change

8.7.5 Observe and describe that a system may stay the same because nothing is happening or because things are happening that counteract one another.

WET Activities (page): 72, 171,

8.7.7 Illustrate how things, such as seasons or body temperature, occur in cycles.

WET Activities (page): 25, 79, 116, 144, 157, 161, 174, 182, 201, 206, 262, 293, 348